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(54) **APPARATUS, SYSTEM, AND METHOD FOR WRIST TRACKING AND GESTURE DETECTION VIA TIME OF FLIGHT SENSORS**

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(57) **ABSTRACT**

The disclosed wrist-tracking apparatus includes (1) a wristband dimensioned to be donned on a wrist of a user of an artificial reality system and (2) a set of Time of Flight (ToF) sensors coupled to the wristband, wherein each of the ToF sensors comprises (A) an emitter that emits a modulated pulse of energy, (B) a receiver that facilitates detecting a reflection of the modulated pulse of energy, and (C) a processing circuit communicatively coupled to the emitter and the receiver, wherein the processing circuit calculates a time of flight for the modulated pulse of energy based at least in part on the modulated pulse of energy and the reflection. Various other apparatuses, systems, and methods are also disclosed.